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**Remote operation and maintenance of integrated circuit
packaging equipment - Status monitoring**

集成电路封装设备远程运维 状态监测

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Foreword

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The integrated circuit packaging process is used to protect the structure of the integrated circuit from external influences and ensure the final electrical, optical, thermal and The mechanical properties are normal: The integrated circuit packaging process is complicated, and the packaging process equipment is to ensure that the integrated circuit is completed reliably and stably: Typical integrated circuit packaging equipment includes mechanical punching machine, screen printing machine, grinding wheel dicing machine, chip mounter, lead wire Bonding machines, etc: As integrated circuit packaging equipment develops towards digitalization, networking, and intelligence, remote operation and maintenance is the key to ensure the quality of integrated circuit packaging equipment: Remote operation and maintenance can realize the reliable operation, improve equipment working efficiency and extend equipment life: Compared with traditional operation and maintenance methods, remote operation and maintenance can establish data collection, condition monitoring, fault identification and diagnosis, and predictive maintenance in the production process: A more effective monitoring and alarm mechanism is established, which saves manpower and material costs, improves the reliability of production equipment and production processes, and realizes the Automatic control and intelligent management: Among them, status

monitoring runs through the entire remote operation and maintenance process, through remote real-time monitoring of the operating parameters of integrated circuit packaging equipment, timely Detect abnormal conditions and make early warnings and alarms, realize network, remote and visual management of equipment; users only need to log in to the client to understand On-site information, to understand the real-time status of equipment operation, maintenance requirements and performance status, and to adjust equipment operating parameters without going to the production site Settings and other operations: The purpose of compiling this document is to unify the relevant requirements for the remote operation and maintenance of integrated circuit packaging equipment: Users have a basis to rely on, so as to achieve more accurate maintenance and management of integrated circuit packaging equipment, promote the equipment to function more effectively, and improve Application efficiency: Remote operation and maintenance of integrated circuit packaging equipment Condition Monitoring

1 Scope

GB/T 43972-2024 covers the condition monitoring part of remote operation and maintenance for integrated circuit packaging equipment. A packaging line runs die bonders, wire bonders and moulding presses continuously, and an unplanned stop costs both the throughput and the work in progress; the equipment makers are often far from the fab, sometimes in another country, so the diagnosis has to be made from telemetry rather than from a visit. The standard sets the architecture of the condition monitoring system and the main monitoring process, defines the objects monitored - the equipment itself and its operating environment - and the data collection, then the preconditions for monitoring, covering the characteristics of the monitoring parameters, their classification, the choice of monitoring method and the measurement intervals, followed by the condition monitoring process and its requirements, the analysis and alarm handling, and the data and security requirements. It took effect on 1 November 2024.

This document specifies the system architecture, main processes, monitoring objects, data collection, monitoring Relevant requirements for setting pre-test conditions and status monitoring process: This document is applicable to typical integrated circuit packaging such as mechanical punching machine, screen printing machine, grinding wheel dicing machine, chip mounter, wire bonding machine, etc: The operation status monitoring of equipment remote operation and maintenance can also be used as a reference for remote operation and maintenance status monitoring of equipment in other electronic component production lines:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date,

only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 43796-2024 Integrated circuit packaging equipment remote operation and maintenance data collection

3 Terms and definitions

The following terms and definitions apply to this document: 3:

1 The process of remotely realizing functions such as operation and maintenance object data collection, status monitoring, fault mode identification, and predictive maintenance through the network: [Source: GB/T 43796-2024, 3:1] 3:2 status monitoring By monitoring, analyzing and judging certain characteristic parameters of the monitored object, we can check whether its working state is normal or abnormal, and The process of issuing early warnings or alarms in a timely manner, publishing visual monitoring results, and providing information for further fault identification: 3:

3 Monitored parameters The quantitative characteristic value determined for the purpose of monitoring reflects the actual operating status of the equipment:

4 Abbreviations

The following abbreviations apply to this document: AR:Augmented Reality MR: Mixed Reality VR: Virtual Reality